

Appln. No. 10/678,153
Amdt./Response filed December 8, 2005
replying to Office Action of August 8, 2005

PATENT
Customer No. 22,852
Attorney Docket No. 2418.0773-01

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended): The ~~[[A]]~~ method of claim 14 ~~making a piezoelectric film comprising:~~
 ~~obtaining a piezoelectric material;~~
 ~~reducing said piezoelectric material to particles;~~
 ~~contacting said particles with a flexible matrix material; and~~
 ~~applying said matrix material to one or more surfaces of a member,~~
 wherein said member includes a handle, a ski apparatus, or a handle and a ski apparatus.
- 2.-5. (Canceled)
6. (Currently Amended): The method of claim 14 ~~[[1]]~~, wherein:
 said matrix material comprises at least one flexible material chosen from an epoxy resin, thermoset material, and a thermoplastic material.
7. (Currently Amended): A ~~The~~ method of making a piezoelectric film comprising claim-1, wherein:
 obtaining a piezoelectric material, said piezoelectric material comprises at least one piezoelectric material chosen from ammonium dihydrogen phosphate, potassium dihydrogen phosphate, barium sodium niobate, barium titanate, barium titanate (poled), lithium niobate, lithium tantalite, lead zirconate titanate (such as PZT-2, PZT-4, PZT-4D, PZT-5H, PZT-5J, PZT-7A, PZT-8), quartz, Rochelle salt, bismuth germanate, cadmium sulfide, gallium arsenide, tellurium dioxide, zinc oxide, and zinc sulfide;

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contacting said piezoelectric material with an organic binder, said binder
comprising at least one organic material chosen from wax or nylon;
sintering said piezoelectric material to make a ceramic material;
reducing said ceramic material into particles;
contacting said particles with a flexible matrix material;
molding said matrix material onto a surface of a member; and
curing said matrix material,
wherein said piezoelectric film facilitates a substantial dampening of vibrations
from said member.

8.-13. (Canceled)

14. (Previously Presented): A method of making a piezoelectric film comprising:
obtaining a piezoelectric material, said piezoelectric material comprising at least
one oxide chosen from lead oxide, zirconium oxide, and titanium oxide;
contacting said piezoelectric material with an organic binder, said binder
comprising at least one organic material chosen from wax or nylon;
sintering said piezoelectric material to make a ceramic material;
milling said ceramic material into particles;
contacting said particles with a flexible matrix material;
molding said matrix material onto a surface of a member; and
curing said matrix material,
wherein said piezoelectric film facilitates a substantial dampening of vibrations
from said member.

15. (Original): The method of claim 14, further comprising:
applying electrodes to said matrix material.

16. (Original): The method of claim 15, further comprising:
polarizing said matrix material with an electromagnetic field.

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17.-27. (Canceled)

28. (Previously Presented): A method of making a piezoelectric film comprising:
obtaining a piezoelectric material, said piezoelectric material comprising at least one oxide chosen from lead oxide, zirconium oxide, and titanium oxide;
contacting said piezoelectric material with an organic binder, said binder comprising at least one organic material chosen from wax or nylon;
sintering said piezoelectric material to make a ceramic material;
milling said ceramic material into particles;
contacting said particles with a flexible matrix material;
molding said matrix material onto a surface of a member; and
curing said matrix material,
wherein said piezoelectric film facilitates a transfer of heat to said member.

29. (Previously Presented): The method of claim 28, further comprising:
applying electrodes to said matrix material.

30. (Previously Presented): The method of claim 29, further comprising:
polarizing said matrix material with an electromagnetic field.

31. (New): The method of claim 15, wherein said applying electrodes comprises applying said electrodes in a uniform pattern on said film.

32. (New): The method of claim 15, wherein said applying electrodes comprises applying said electrodes in a interdigitated pattern on said film.

33. (New): The method of claim 14, wherein said piezoelectric material includes lead oxide, zirconium oxide, and titanium oxide.

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34. (New): The method of claim 14, wherein the member is comprised of pre-impregnated unidirectional fibers that are impregnated with a resin.
35. (New): The method of claim 14, wherein the piezoelectric film structure includes at least one carbon fiber layer.
36. (New): The method of claim 35, wherein fibers within the carbon fiber layer are oriented to control a resistance of the carbon fiber layer.
37. (New): The method of claim 35, wherein a piezoelectric circuit is thereby formed such that a lowest resistance path is formed between two contacts that are oriented parallel to the fibers.
38. (New): The method of claim 35, wherein the carbon fiber layer is on an external surface of the member, and the carbon fibers are substantially parallel with each other.
39. (New): The method of claim 14, wherein the member comprises a resistance, and the resistance is adjusted by positioning fibers within the member.
40. (New): The method of claim 39, wherein the resistance is adjusted to a value that maximizes the dampening effects piezoelectric material.
41. (New): The method of claim 39, wherein the fibers are carbon fibers.
42. (New): The method of claim 14, wherein the piezoelectric material and one or more electrodes form a circuit.
43. (New): The method of claim 42, wherein the frequency of the circuit is selected to generate an electric potential that is capable of dampening vibration.

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44. (New): The method of claim 42, wherein the member comprises a resistance and a natural frequency, and wherein the resistance is adjusted to facilitate tuning of the circuit to match the natural frequency.

45. (New): The method of claim 42, wherein vibration dampening in the member is facilitating by tuning the circuit.

46. (New): The method of claim 45, wherein the circuit is tuned to a frequency corresponding to a natural frequency of the member to facilitate dampening.